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ABSTRACT

This case study of a 3-year-old child with a language disorder describes the content, implementation, and use of a therapy approach integrating the acquisition of language and social-interactive skills. The intervention setting was a preschool for children with severe language impairments located on a university campus, where children and their assigned clinicians participated in one-on-one and group activities. The methods used to enhance the boy's communicative and interactional skills included developing a positive child-clinician relationship, establishing joint attention, responding to communication attempts, assigning meaning to noncommunicative behaviors, establishing communicative routines, and enhancing comprehension. This nonintrusive, facilitative approach allowed success in interacting and increased use of communication. The paper provides a transcript of an interaction between the boy and his clinician, and month-by-month evaluations of the boy's progress. (11 references) (JDD)

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FACILITATING COMMUNICATION DEVELOPMENT IN A LANGUAGE-DISORDERED CHILD

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ABSTRACT

Current methods of language therapy have offered limited success with children who exhibit difficulties in social-interaction accompanying a severe language impairment. The following case study describes the content, implementation, and use of a therapy approach integrating the acquisition of language and social-interactive skills. At 3;1, the child engaged only occasionally in interactions with others, used two words, and consistently failed to respond to verbal communications. By the end of the 3-month intervention period, the child frequently engaged in interactions with the clinician. His nonverbal communications dramatically increased. Imitative and non-imitative verbal communications also increased. The results suggest that a non-intrusive, facilitative approach produced significant improvements in the child's social and communicative skills.

INTRODUCTION

Current methods of language therapy, both individual and group, have offered only limited success with young children who exhibit atypical social behaviors in addition to a severe language impairment. These children, sometimes diagnosed as having Pervasive Developmental Disorder (PDD), are difficult to engage in interactions and present significant challenges to the speech-language clinician. In the absence of effective intervention approaches, clinicians have tended to rely on techniques designed for children whose communication problems are uncomplicated by difficulties in interacting. However, techniques focusing on the acquisition of specific language skills often fail to address the children's more fundamental problems in social interaction. An alternative is a therapy approach which integrates the acquisition of language and social-interactive skills. The following describes the content, implementation, and results of such an approach with one child. Although the case is multi-faceted and the pace of progress gradual, it typifies both the complex histories the children present and the significant difficulties the children have in acquiring communicative competence.

The development of an intervention approach requires the synthesis of many ideas and techniques. These include theoretical and empirical works on normal and atypical language development. Some elements of the approach to be described were derived from existing intervention techniques and the authors' clinical experiences. The primary sources from which the approach was developed included: Bates (1979), Bruner (1981),

Dore (1979), Harding (1984), Stillman & Battle (1984), Sugarman (1984), Tomasello & Farrar (1986), Warren & Kaiser (1986), and Wetherby & Prizant (1989).

THE CHILD

Kevin was referred for assessment at age 2. His mother reported that he did not communicate verbally nor did he appear to comprehend the verbal communications of others. At the initial assessment, she also expressed concerns about Kevin's social development. She described situations in which Kevin became very upset when she attempted to separate from him; yet when they were together, Kevin failed to initiate play with her or respond to her attempts to interact. His mother also reported that Kevin showed little interest in other children.

Kevin's family was bilingual. Korean was the primary language spoken in the home, but all family members were fluent in English. Kevin's prenatal and birth histories were normal and audiometric testing at the time of the initial assessment indicated no hearing impairment.

INITIAL ASSESSMENT

Kevin's initial speech and language assessment included both standardized testing and structured observational procedures. The Sequenced Inventory of Communication Development-Revised (Hedrick, Prather, & Tobin, 1984) was administered to Kevin at 2;3. He achieved a Receptive Communication Age of 8-12 months and an Expressive Communication Age of 16 months. The Bzoch-League Receptive-Expressive Emergent Language Scale (Bzoch & League, 1970) revealed a Receptive

Language Age of 6-7 months and an Expressive Language Age of 7-8 months. The results of standardized testing may have been affected by the family's use of Korean in the home.

To evaluate Kevin's functional communication abilities and overall social skills, Kevin was observed in a structured play setting interacting with a clinician. Toys requiring adult assistance such as bubbles and balloons were used to provide opportunities for Kevin to communicate.

During the observation period, Kevin was unresponsive to most clinician attempts to interact and seldom initiated interaction. At times, he exhibited ritualized play such as lining up objects and manipulating them in a repetitive fashion. Kevin openly rejected the clinician, e.g. turned away, if she interfered with the ritualized play. Kevin's use of verbal communication was limited to the words "no" and "bye-bye". His nonverbal communication skills consisted primarily of guiding the clinician's arm to perform a task, for example, to open the door. Kevin consistently failed to respond to verbal communication.

A second observational assessment at 3;1, immediately prior to the 3-month intervention period, revealed little change. Kevin often appeared unaware of those around him. When placed with four language-impaired children, Kevin did not engage in parallel or interactive play. He occassionally interacted with adults but, overall, exhibited minimal ability to use or comprehend any form of communication.

TEACHING GOALS

Based on the assessment results which indicated deficits in both communicative and social skills, the following teaching

goals were developed:

1. Kevin will consistently engage in social interactions with others.
2. Kevin's comprehension of communication will increase.
3. Kevin will communicate with increased frequency.

TREATMENT SETTING

The intervention setting was a preschool for children with severe language impairments located on a university campus. The focus of the program was the acquisition of social and communicative skills. The program, through the use of graduate student clinicians, maintained a one-to-one clinician/child ratio and served five children ages 2 to 4, four days per week, two and one-half hours per day. Children participated with their assigned clinician in both group and individual activities. Group activities such as music and cooking were designed to encourage involvement of all children. Participation, however, was not required and clinicians were free to join or leave group activities based upon their child's interest and willingness to participate. Individual activities were designed by each clinician to maximize opportunities for interaction. For Kevin, these included play with toys; preparation of snacks; art; puzzles and books; and gross motor activities in the classroom, gym, and on the playground.

Children were videotaped with their clinicians weekly. Written descriptions of the videotaped interactions and daily logs were summarized by the clinician each month and served as the primary means for documenting progress in therapy.

METHODS

The following describes the methods used to enhance Kevin's communicative and interactional skills during the 3-month intervention period.

Developing a positive relationship

The fundamental step in an intervention approach which seeks to integrate communication and social interaction goals is the establishment of a positive relationship between child and clinician. A positive relationship is the outcome of mutual expectations, trust, and pleasurable experiences in interacting. To establish an environment in which the clinician/child relationship could be developed, the clinician carefully noted what was interesting to Kevin. She incorporated ways of interacting, objects, and activities that he enjoyed into their daily routines. For example, the clinician observed that exaggerated facial expressions, actions, and verbalizations maintained Kevin's attention and seemed to encourage him to interact. She, therefore, made a point of using exaggerated behaviors in her interactions with Kevin. The clinician was also sensitive to Kevin's indications of disinterest, discomfort, and displeasure. She immediately acknowledged such indications and responded to them appropriately.

Establishing joint attention

The clinician initiated interactions with Kevin by joining him in the activity in which he was already engaged. In addition, when Kevin became less interactive during an activity, the clinician used imitation to regain his attention. Even when

Kevin engaged in perseverative play, the clinician copied his behavior in a less ritualized and repetitive fashion. Once Kevin's attention was gained, the clinician initiated an interactive game that included the original action. For instance, if Kevin was banging blocks and resistant to overtures by the clinician, she would pick up two blocks, begin banging them, and pause. When Kevin began banging again, the clinician responded by banging. This sequence was carried out until Kevin's attention was gained.

Redirecting Kevin into new activities repeatedly proved ineffective. When the clinician became overtly directive, Kevin often reverted to ritualized or repetitive behaviors. When Kevin became too focused on an object, the clinician modified the activity to allow her participation. Often Kevin could be re-engaged if the clinician began an interactive game involving the object in which Kevin was interested. Activities involving toys or objects that were readily manipulated and explored in a non-interactive manner were avoided. These included objects that had many manipulable parts or other distracting features, e.g. sets of miniatures or a shiny toy that could spin. If Kevin selected an activity that the clinician was unable to modify to create a productive interaction, she enticingly presented one of Kevin's favorite activities or objects to shift his focus.

Responding to communication attempts

The intervention focus was on creating an environment conducive to communicative interaction rather than the teaching of specific communicative forms. All of Kevin's attempts to communicate, verbal and nonverbal, were immediately acknowledged.

Kevin's efforts to communicate were met with natural, pragmatically appropriate responses to provide maximal encouragement. For example, in response to Kevin's gesture for sliding, the clinician would say, "Want to slide?", make the sliding gesture, and initiate an interaction around the slide. Or, if he eagerly looked at the clinician following some display, e.g. peek-a-boo, she would say, "Do it again?" Verbal praise and material rewards for communicative behaviors were not used because they disrupted the natural course of the interaction.

Assigning meaning to non-communicative behaviors

The clinician responded to certain behaviors of Kevin's as if they were communicative to assist him in understanding that his behaviors could serve a communicative function. For example, when Kevin looked and motioned toward the kitchen, the clinician responded by saying, "Want a drink? (pause) OK" and pointed to the sink. Kevin and the clinician then walked to the kitchen to get a drink of water. When Kevin lifted his leg in the air (an action not directed to the clinician), she said, "Oh...want to kick?" She then began to kick in the air to initiate an interaction involving kicking. The clinician and Kevin alternately kicked in the air and looked at each other to indicate the other's turn.

Establishing communicative routines

Each activity of the day was a routine. The clinician used specific actions, gestures, and verbalizations to initiate, terminate, and signify steps within each routine. These communications were often selected from actions, gestures, or

verbalizations previously produced by Kevin. The communications marking each step in the routine were used consistently so that Kevin could become familiar with them. The clinician inserted pauses in the routines to give Kevin the opportunity to regulate activities by initiating, terminating, or requesting the next step.

Once Kevin consistently communicated within a routine, the routine was gradually expanded by including new and varied steps. For example, Kevin learned to lift his hands to his eyes to re-initiate peek-a-boo. When Kevin consistently used this gesture, the clinician added a new step, clapping after she said, "peek-a-boo". For a period of time, the clinician always clapped at the same point in the routine. Then, she paused after saying "peek-a-boo" to allow Kevin to clap his own hands to indicate he wanted her to clap. Each activity was extended to include steps which provided new opportunities for Kevin to communicate.

The clinician also used routines to elicit more sophisticated communications. When Kevin consistently communicated within a routine, the clinician responded ambiguously to encourage him to expand his original communication, e.g. by adding a verbalization to his gesture. The clinician used incomplete answers to encourage Kevin to communicate with gestures or verbalizations he had previously used in that activity. For example, if Kevin looked curiously at the paints, she would say, "Oh, you want to..." with the expectation that Kevin would say "paint" or make a painting gesture.

Enhancing comprehension

All interactions included many gestures and concrete simple language to describe Kevin's actions and perceptions. The clinician modified her language through careful choice of vocabulary, simple structure, and frequent repetition to allow for maximal comprehension. Visual referencing and depictive gestures were used simultaneously with verbal communications. The clinician frequently provided cues about what was to follow in order to keep Kevin from becoming confused and ending the interaction. Familiar gestures and verbalizations were incorporated into novel situations to make them less threatening.

ILLUSTRATION

The following describes an interaction between Kevin and the clinician during sandbox play. Verbal communication is written orthographically. Nonverbal actions are capitalized.

C = Clinician, K = Kevin

K: LOOKS AT THE SANDBOX

C: Want to play with sand?

K: WALKS TO THE SANDBOX, TOUCHES THE LID, LOOKS AT THE CLINICIAN AND SMILES

C: Take the lid off? Oh, okay.
BEGINS TAKING THE LID OFF
MAKES FACIAL EXPRESSIONS
Heavy, oh, heavy
PRETENDS TO HAVE DIFFICULTY LIFTING THE LID

K: Heavy
LAUGHS

C: Heavy lid
CONTINUES TAKING OFF THE LID

K: Heavy
LAUGHS

C: Take it off...heavy lid

K: Heavy lid
LAUGHS

C: Whew--all through!
PROPS THE LID AGAINST THE WALL

In this interaction, several of the methods were used. The sandbox routine was initially developed because Kevin had expressed interest in playing in the sandbox. Here, when Kevin looked toward the sandbox, the clinician responded by describing his actions. She also provided an opportunity for Kevin to continue communicating. The clinician attributed meaning to Kevin's touching the sandbox lid. She used very animated facial expression and vocalizations. Her exaggeration of the heaviness of the lid successfully maintained Kevin's attention. The clinician expanded on Kevin's communicative utterances, i.e. when Kevin said "Heavy", the clinician said, "Heavy lid". Taking the lid off the sandbox was a step Kevin had used in previous sandbox interactions to indicate his interest in the activity. Kevin's communications were immediately responded to by the clinician's recasting his communication or by performing the appropriate action in response to his communication.

As the interaction continued, the clinician observed Kevin's behaviors and capitalized on opportunities to encourage communication and interaction.

K: WALKS BACK TO THE SANDBOX
POINTS TO THE SHELF WHERE THE TOYS ARE

C: What do we need?
HANDS-UP GESTURE FOR "WHAT"

K: Bucket
PICKS UP THE BUCKET

C: Yes, bucket...What else?

K: PICKS UP A SHOVEL

C: PICKS UP A BUCKET AND A SHOVEL

K: BEGINS SHOVELING SAND AND PUTTING IT IN THE BUCKET

C: BEGINS SHOVELING SAND AND PUTTING IT IN THE BUCKET

K: LOOKS UP AT C.

C: Scoop it up...pour it in
SCOOPS UP SAND AND POURS IT IN THE BUCKET

K: SPILLS SOME SAND ON THE FLOOR, LOOKS UP, AND LAUGHS

C: Uh-oh...on the floor
POINTS AT THE FLOOR

K: Uh-oh
BEGINS POURING SAND AGAIN

C: Pour it in
MAKES A POURING GESTURE

K: In
DROPS SAND SUDDENLY AND LAUGHS

C: Sand!
HOLDS SHOVEL UP IN THE AIR, SUDDENLY DROPS SAND,
AND LAUGHS

K: Sand!
REPEATS THE SAME ACTION

C: Sand, sand, sand!
SHAKES THE SHOVEL AND MAKES THE SAND FALL OUT

K: Sand, sand, sand!
LOOKS UP AND LAUGHS
IMITATES SHAKING ACTION

C: Sand, sand, sand!
REPEATS SHAKING ACTION

K: PUTS FACE DOWN AGAINST THE SAND AND BEGINS BANGING THE
SHOVEL

C: Bang, bang
BEGINS BANGING THE SHOVEL

K: LOOKS UP AND CONTINUES TO BANG SHOVEL

C: Bang, bang

BANGS SHOVEL

K: LOOKS UP, LAUGHS, AND BEGINS POURING SAND AGAIN

C: Pour sand
MAKES POURING GESTURE

K: Sand, sand, sand!
SHAKES THE SHOVEL AND MAKES THE SAND FALL OUT

C: Sand, sand, sand!
MAKES THE SHAKING GESTURE KEVIN MADE

Kevin's lead was again followed at the onset of the segment. Kevin pointed to the toy shelf and the clinician responded with a verbalization about what she perceived was his interest. His communication (picking up the bucket and saying, "bucket") was acknowledged with a verbalization that also encouraged further communication. The clinician selected a bucket and shovel just as Kevin did. Kevin began to shovel the sand showing no interest in the clinician. The clinician began to shovel co-actively (at the same time) and Kevin looked up at her. The clinician responded to his look by verbally describing their actions. When Kevin spilled sand on the floor, the clinician took advantage of an unexpected situation to create an opportunity for communication. She expanded on his interest in the spilled sand and communicated about his focus of attention.

The clinician included Kevin's dropping sand instead of shoveling as a step in their game. Then, she expanded his original action and Kevin's interest was maintained. When Kevin became non-interactive, the clinician began to co-act by banging her shovel as he was and verbally describing their actions. Kevin looked up and the two returned to an interactive step of the activity. Kevin then verbalized and produced the shaking

gesture used earlier in the activity to signal he wanted to return to the earlier portion of the game. The clinician responded to this communication. Throughout the interaction, the clinician used concrete language and gestures to enhance Kevin's comprehension.

RESULTS

Standardized testing demonstrated progress mainly in imitation of verbal language. However, analysis of Kevin's videotaped interactions with his clinician indicated dramatic changes between months one and three in social interaction and nonverbal communication.

Month 1

1. Kevin played alone the majority of the time. His interactions with the clinician and others were brief. However, Kevin appeared to notice and become more accepting of the clinician's presence.

2. He did not appear to notice attempts by the clinician to pair specific responses with his actions. For instance, when Kevin and the clinician were rolling a ball, Kevin did not appear to grasp the reciprocal nature of the game nor the contingency between his actions or vocalizations and when the clinician rolled the ball to him.

3. Kevin did not intentionally communicate disapproval, but instead expressed negative feelings by crying. Although he sometimes said the word "no", it was not used appropriately; on occasion, he said "no" when displaying positive affect and not exhibiting displeasure.

4. He communicated most often when interacting with his mother

or his clinician in routine activities.

Month 2

1. Kevin's awareness of the clinician's presence evolved into acknowledgement and increasing interest in interacting.
2. He started using gestures and vocalizations to indicate the next step in familiar sequences. In the ball rolling activity, Kevin purposefully communicated and clearly waited in anticipation for the ball to be rolled.
3. Kevin intentionally communicated disapproval, for example, by pushing the clinician's hand away.
4. He began to direct the clinician's attention, often repeating a vocalization when the clinician failed to immediately notice his referent.
5. Kevin's imitation of gestures and verbalizations increased.
6. His mother reported improved interactional and communicative skills at home.

Month 3

1. Kevin moved from awareness and acknowledgement of the clinician to inviting her participation by initiating favorite activities.
2. He frequently communicated to regulate or direct the clinician's behavior.
3. The complexity of Kevin's communications increased. He became more likely to combine gestures and vocalizations rather than using only one communicative form.
4. His communications generalized from familiar to unfamiliar situations with the clinician, family members, and other members

of the program's staff.

5. Kevin interacted for longer periods of time and consistently communicated within interactions.

Kevin exhibited significant improvement in his ability to engage in communicative interaction. Although he was sometimes non-interactive and non-communicative, the time Kevin and the clinician were engaged in communicative interaction increased.

DISCUSSION

The positive relationship developed between Kevin and his clinician appeared to be a primary factor in his acquiring interest in communicating. The relationship evolved as a result of mutual enjoyment of experiences that required interaction. Kevin seemed to learn that interaction was pleasant and desirable while acquiring skills to interact more effectively. This in turn prepared him for and made him more willing to attempt interaction with others.

An important aspect of Kevin's progress was the decontextualization of his communication attempts. Once Kevin began communicating in the routines established by the clinician, he not only seemed to enjoy interacting and to better understand the functions of communication, he also began to incorporate parts of communicative activities into new situations. As he was shown that his communication could cause a response, Kevin seemed to want to explore the uses of communication in a variety of settings.

Kevin's willingness to communicate was clearly affected by the clinician's method of interaction. Directiveness on the clinician's part usually triggered non-interactive behaviors from

Kevin. For example, if the clinician attempted to elicit a particular response, Kevin would turn his back to the clinician, lean over the object he was interested in to block the clinician out, or move across the room. He also reverted to previous ritualized behaviors such as lining up items, smelling objects, or moving them in front of his face.

The use of Korean in the home was felt to be an impeding factor in Kevin's progress. He exhibited limited use of both Korean and English. His parents were encouraged to use English at home. However, this did not occur on a consistent basis.

Kevin learned to accept and enjoy interacting with other people. His relationship with the clinician provided the foundation for his progress. Initial positive interactions encouraged communication attempts. The predictable nature of the routines allowed communication to occur in situations in which he could anticipate order in an otherwise uncertain and confusing world. These communications were reinforced and provided him with knowledge of the functions of communication. He, therefore, became more willing to communicate in novel situations and with different partners. A non-intrusive, facilitative approach allowed success in interacting and, consequently, increased use of communication.

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